To Keep Deadly Bichloride of Mercury From Family Medicine Shelves

NEWSPAPER readers throughout the country during a period of nearly a week watched with interest intensified to the point of awe the daily progress of what might be called the living death of Banker B. Saunders Walker, of Macon, Ga., from the effects of a tablet of bichloride of mercury, which he swallowed at night, mistaking it for a headache remedy. Naturally they have wondered how it was possible for a man thus fatally poisoned, with intestines and kidneys paralyzed, to be free from pain and for days converse cheerfully with his family, and even attend to his business affairs.

In an article specially written for this page, Dr. Carlin Philips, whose experience as visiting physician to the poison wards of Bellevue Hospital, New York, gives additional authority to his statements, traces the course of poison cases of which that of Banker Walker is typical, showing that when once a fatal dose of bichloride of mercury has passed out of the stomach into the intestinal tract death can rarely be averted, and that for a period of several days pain is banished by the benumbing effect of the poison—though the brain remains unaffected. In the Macon case, medical assistance arrived too late.

And yet, as Dr. Philips remarks, this deadly poison is accessible to everyone at practically every drug store, being in general use as an antiseptic.

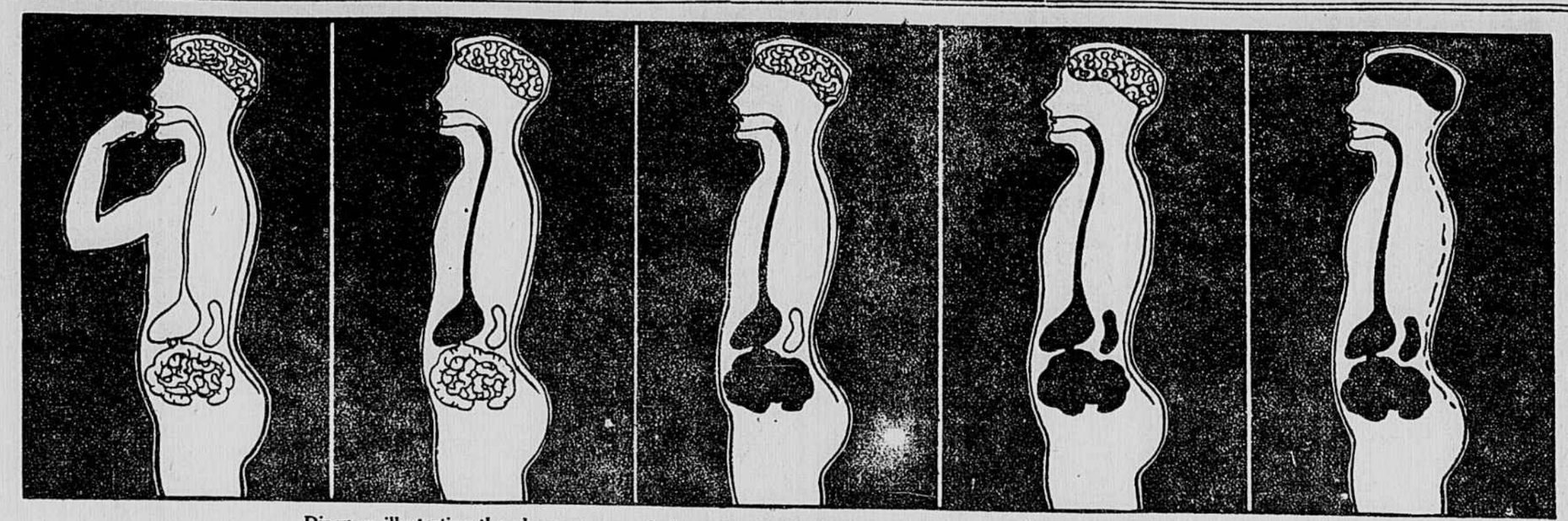

Diagram illustrating the slow progress of almost inevitable death by bichloride of mercury poisoning.

FIRST—The poison tablet is swallowed; a slight burning sensation in the throat soon follows, but causes little alarm. SECOND—The poison rests in the stomach for from thirty minutes to four hours before entering the intestinal tract. During this period it is possible to avert serious consequences by the use of antidotes and emetics, though there is apt to be collapse from prolonged vomiting and suffocation. THIRD—The poison has entered the bowel and is taken into the circulation. There is progressive paralysis all along the intestinal tract. Reaching the kidneys, the poison destroys their power to remove it from the blood. FOURTH—The intestinal organs being now paralyzed, the patient naturally feels no pain. His brain is clear and he is often capable of going about his ordinary affairs. FIFTH—At last the poison, which the kidneys are powerless to eliminate, causes death, the brain being the last organ to succumb.

By CARLIN PHILIPS, M. D.

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OWING to the wide publicity given to the affecting circumstances attending the death of a prominent banker and esteemed citizen of Macon, Ga., from bichloride of mercury poisoning, in all probability we may anticipate an increasing number of attempted suicides by this all too accessible means. This painful aspect of the matter, added to the ever present menace of accident or carelessness in handling this familiar and deadly substance, emphasizes the need of publicity from a different standpoint, that will result in placing it beyond the reach of individuals in general.

At the moment of this writing, the wife of a druggist in the Bronx—Mrs. Roy Chesman—is reported at the Fordham Hospital, New York, suffering from the effects of a bichloride of mercury tablet swallowed by mistake. These mistakes are much more frequent than the public realize.

At present virtually anyone may buy bichloride of mercury openly and freely at almost any drug store. It should not be sold except upon a physician's prescription. As much care should be exercised in keeping this drug off the shelves of medicine closets in private homes as is used in the case of cyanide of potash, or pure carbolic acid. Since laws have been enacted preventing the sale of carbolic acid except in a dilution of one part in twenty, there have been practically no deaths from such poisoning in the city of New York.

Bichloride of mercury, or corrosive sublimate, is formed by a combination of liquid metal quicksilver and muriatic acid. The world's supply at present comes from the mines of Texas and California, but it is also found in many other parts of the world. It is a white powder, easily soluble in water, and has a disagreeable acrid metallic taste. In its action it is intensely inimical to life of all varieties and grades by combining chemically with animal and vegetable tissue, and so producing paralysis and death. It is for this reason that the drug is a powerful germicide and consequently a disinfectant. Vegetable or animal tissues immersed in bichloride solutions become tough, shrunken, whitish in color and proof against putrefaction.

The violent poisonous action of this drug extends to all living matter from the most minute vegetable organisms (bacteria) to the highest living cell structure as found in the tissues of the human body. Whenever the metal, and especially the soluble and available bichloride salt, comes in contact with either vegetable or animal matter, albuminate of mercury and muriatic acid are formed.

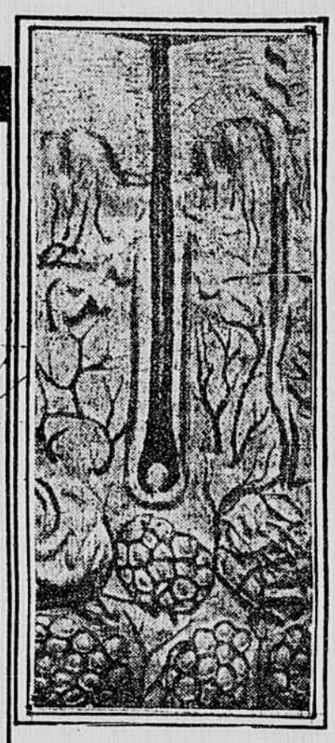
One part in a million parts of water kills the minute and microscopic forms of animal life called algae, that live in stagnant water pools. On account of this peculiar property of bichloride, or corrosive sublimate, to combine with and thereby destroy animal and vegetable life, it is one of our most popular and effective household antiseptics.

It has been used internally for centuries by physicians in the treatment of certain blood diseases, and more recently as an antiseptic externally for the cleaning of wounds, ulcers, etc.

When taken internally, the severity of the symptoms and rapidity of action depend upon the size of the dose and the susceptibility of the patient. Whether given by mouth or by hypodermatic injection, as is often the case, the effects of an overdose upon the body are practically the same. According to the statistics of Kobert, 90 per cent of mercurial poisoning cases are due to its administration in some form by physicians; for example, the drug having been given in too large a quantity at a single dose, or its use continued for too long a period of time, or, finally, to careless or excessive use in antiseptic surgery.

Criminal, including suicidal, poisonings form only 2 per cent or less of the cases recorded in the city of New York less than two cases a month are brought to the hospital for care and treatment.

A cat, after an operation for kidney transplantation at Rockefeller Institute. This operation is useless in cases of bichloride of mercury poisoning because, even if the patient could survive it, the transplanted kidney would be destroyed as its predecessor was.



A greatly magnified section of human skin—showing sweat glands and pores—which, while the patient can endure its necessary stimulation, can be induced to perform the functions of a "third kidney."

Commercially, bichloride of mercury is sold in tablet form, and each tablet contains about seven times the amount necessary to cause death in an adult. A person taking an overdose notices almost immediately the disagreeable and acrid metallic taste, but in a few minutes burning pains begin in the throat and later in the stomach. The pains and burning sensation increase in severity and soon cause a choking sensation of impending death. Excessive and uncontrollable thirst is a distressing accompaniment, and this, combined with nausea and vomiting, often contributes at this stage to collapse and sudden death. Usually, however, this is only the beginning of a very slow but sure death.

Vomiting and retching begin promptly, and after the contents of the stomach are evacuated, blood and pieces of the dead and burned skin lining of the throat and stomach are discharged. Cases have been reported where death ensued within thirty minutes after the poison had been swallowed, but usually the patient lingers for days.

The vomited matter at first is thick and bilious in character, but eventually becomes bloody, with foetid odor. The face is alternately pale and flushed and expresses the greatest anxiety and suffering, while the voice becomes gradually more indistinct. At this time a severe cough with bloody expectoration is apt to be a constant symptom. The breath becomes foetid and in a few days the teeth become loosened and often are shed from the red and swollen gums. The salivation, or excessive secretion of mucus from the mouth, may be so extreme that quarts of foetid fluid run from the mouth in a few hours. The pains in the abdomen increase, becoming colicky or cramp-like. Diarrhoea follows promptly and is a most distressing symptom, persisting for hours and torturing the already weakened victim. The breath becomes increasingly difficult and the sensation of choking to death is a common accompaniment. When the throat had been badly burned, oedema of the larynx or swelling of the windpipe, may cause strangling and suffocation unless tracheotomy, with insertion of a silver tube in the windpipe, is promptly done.

After a few hours the patient may feel better and hopes of a recovery be entertained. However, the cessation of symptoms such as pain, vomiting, etc., is only temporary usually, and is due to the nervous system becoming poisoned and consequently benumbed. At this period the brain usually remains clear and the patient quite conscious, capable of directing his business affairs, if necessary; and if his throat is not too badly burned, he is able to carry on conversation.

Within twelve hours after the poison has been taken the physician is able to forecast the outcome of the case. This is clearly shown by an examination of discharges from the kidneys, which tells at once whether the drug has passed from the stomach into the bowel and is being absorbed into the blood.

When the drug has once passed into the intestine it is beyond the reach of antidotes, and general poisoning will result.

The body uses every possible means to throw off the invader by means of the kidneys, bowels and skin, each of which is capable of eliminating materials inimical to health. In passing through the kidneys, the drug causes the same blighting effect—the kidney tissue is destroyed and ceases to be able to carry on its function. Thus one of the most important means of eliminating obnoxious and unhealthy materials of the body fails.

Again the body attempts to rid itself of poison through the intestines, and especially the large bowel; and again here the poison shows its burning and blighting influence. The entire intestine becomes reddened, swollen, blackened. The lining sloughs away, leaving great open ulcers and sores.

In turn the normal poisonous content of the bowel (poisonous germs, etc.) infects these open ulcers and complete necrosis, or sloughing of the bowel lining results. In this way another of the avenues available for the escape of the poison has been paralyzed and closed.

If the kidneys were not destroyed by the poison during the process of elimination, then there would be some hope of recovery, although severe damage had occurred in other vital organs.

The modern method of treatment consists, first, of emptying the stomach promptly and trying in every way to prevent the poison from entering the bowel. For this purpose emetics, stomach tubes, etc., are used. The stomach is filled again and again with a solution of milk and eggs and the whole contents repeatedly removed. The egg and milk mixture combines with the poison, rendering the same inert, and also, being a fluid, it assists in washing the material from the stomach cavity.

If this preliminary method is not successful and the poison passes into the bowel, then the method of treatment becomes entirely changed. Our effort is directed to diluting the poison in the blood, and, if possible, to use other organs than those we know are being damaged to accomplish this result.

For this purpose the skin of the entire body—which is called the "third kidney"—is used. The skin is capable of doing exactly what the kidneys are accustomed to do, provided every assistance is given.

Even though the kidneys were not attacked and destroyed in this condition, and were capable of carrying on their usual work of elimination, the bowels are always so severely damaged that such an injury to the latter organs alone would be sufficient to cause death, in most cases.

The recent case in Macon, Ga., has caused widespread interest. All kinds of suggestions were offered, among others, surgical transplantation of healthy foreign kidneys.

Such a possibility is the result of the wonderful research work of Dr. Alexis Carrel, who recently won the much coveted Nobel prize of $40,000 for his contributions to experimental surgery. The original experimental work on kidney transplantation was done six years ago by Dr. Carrel upon cats. In all I believe he used in his first work twelve cats—and all of them died from complications within a few weeks.

His work, however, showed that it was possible and probable that a kidney from one animal could be successfully grown in the body of another animal of the same species.

The plain truth is—and it is well for the public to realize it—that if as little as the seventh part of an ordinary tablet of bichloride of mercury passes from the stomach of a person thus poisoned into the intestines, the chances are very greatly against all our present medical and surgical resources averting a fatal issue.

The Reason Everyone Should Save Something, and How to Do It

By HENRY A. SCHENCK,

President Bowery Savings Bank.

EVERYONE should save, because everyone who is not in debt and has a dollar put by is a capitalist.

If you are a woman save for safety. The safest place for your money at all times is the savings bank. If you are a man save for opportunity. The time will come to put those savings into business or property of your own.

Don't try to save too much. In general a tenth of what you earn is a good percentage of saving. At least it is a good scale upon which to begin.

Ten years is a good age at which to begin saving. Then and always the amount saved is secondary to the formation of the habit of saving. Once that habit is formed the amount takes care of itself.

Watch the little leaks. In New York an incredible amount is wasted on car fares. Men, women and children jump on a car, ride three blocks and jump off again, saving practically no time, losing the advantage to their lungs and general health, of the brisk three blocks walk, and tossing away a nickel.

A boy at sixteen should save with the object in view of marrying, and he should resolve not to marry until he is well able to take care of his wife. I know many couples marry when they have saved less than a hundred dollars. Both work outside the home and some of them manage to get on very well, but it is much better if a man save and wait until he has a $500 bank account, so that his wife can remain in the home and so that they will be prepared for the emergencies of illness or his loss of work.

A man should always save. No matter how much he earns he has always an object for which to save. In the order of their importance I name them as they seem to me, first, that he may marry; second, for a home; third, for a life insurance for the benefit of his family; fourth, for the employment of the savings in a business of his own or in acquiring other property; fifth, to provide for the girls of his family after his death. The boys do not need money as a start in their life of manhood. Usually it is a serious detriment. They will develop into better men without it. But for the women of his family a man should provide as well as he can. All this accomplished a man should save for bequests to worthy philanthropies. To do all this will keep a man busy saving all his life as he should do.

There are no boundaries to the financial future of the man who has acquired the habit of saving. I know a man who began his career in the occupation of driving a butcher wagon. That man now holds a high position in a banking institution in this city. He would never have bridged the apparently uncrossable chasm between these positions in the world had he not while he was still driving a butcher's wagon, begun to save his money. A friend of mine saved until his bank account was $300. A chance came to buy the patent of a certain machine, an invention which has since yielded him a fortune. Opportunity comes some time to, perhaps several times, to everyone. If we have money we can take advantage of it If not we lose it. The difference between having saved money and not having saved it may mean the difference between the failure or success of our lives.

That you may not think I am talking from afar off in this subject, permit me for a moment to be personal. I began to work at fourteen. At seventeen I began saving. I tried to save $5 a month. Gradually I found myself able to save ten dollars a month. The habit formed I continued to save, shall always save. "But," says some one, "and I am fortunate if he has not flung down the paper before he says it, "that is easy to say when a boy lives at home and is having no one depending upon him." Yes, I lived at home, but I was one of a large family and I contributed to the support of my family Naturally I say to you who flings down the paper, I trust you have picked it up again, that much depends upon the conditions of a boy's life. If he lives at home and nothing is expected of him by the family he can save nearly all he earns. If he lives at home and pays his board or more than its equivalent, he can save little. If he lives away from home and entirely supports himself and perhaps sends money home, there is a tiny margin left for him, I admit. But he should lay by something, if it is only ten cents a week. He can do that if he will and it is most important, for it is the beginning of systematic saving. Soon he will have a dollar and as I have before stated the boy who owes nothing and has a dollar in the bank is a capitalist. Moreover he has a right to the self respect of the capitalist, for he has money that he has himself earned. He has laid the foundation of a fortune. Do not smile. Some of the greatest fortunes have begun even in so small a way.

Again the impatient reader is ready to fling down a paper. Probably he exclaims, "Visionary!" You are mistaken, sir. A bank officer has neither time nor inclination for visions. Take the case of the boy who has saved a dollar. He will take a pr[illegible] a proprietary interest in that dollar. He will want to add to it and presently he does. His fund becomes two dollars, then five, then ten. He is on the way to possessing $500. With that he can go into a business. Perhaps he is a bootblack. He can buy a chair and enlarge his business. He can buy another chair and employ a boy and after awhile start a branch. He is the head of one or more concerns. He has become a business man. Or he may open a fruit stand or a peanut stand. I have no doubt the pushcart owners require a little capital for a beginning. This is an age of individualism and bachelors and bachelor maids are rampant, I know, but this, the primal fact, holds that a man is happier if married, and if happier he is a more efficient citizen. For this reason I have said that a sixteen-year-old boy should have in view while he saves the ability to take care of a wife, and he should not marry until he is sure he can do so. My reason for this statement is founded in personal experience. I am happier as a married man than I was as a bachelor. Any man is, provided he has been careful to find a true companion.

The next step in saving should look toward a home. In the outlying region of large cities lots can be obtained cheaply and building and loan associations will build a good house for you. There, if a man has saved, comes the advantage of being able to pay several thousands, we will say, down on the house, and the company will take a mortgage for the rest. Than having saved more money, he is able when the mortgage becomes due to pay it. Buying a home in this way gives a man a purpose in saving and fixes the habit in him. So does a life insurance.

In this period the mass of business is done by great corporations, and a man may decide, and rightly, that his aptitude is not in the direction of independent business, but he may wish to connect himself with one of the great corporations. In this way he may be wise. Not all men have the initiative for individual business, but may be more useful and make more money in a department of a large concern. It is a question of aptitude and in greater part of opportunity. I believe that an opportunity should be grasped when it comes, and the path thus begun would, in most cases, better be followed to the end.

A woman's savings are as safe as they can be in any human institution if in a savings bank. Considering the fluctuation of values in properties and the uncertainty of most financial conditions, together with her inexperience in business matters, she would better be content with the four per cent her money will there earn for her in a savings bank. She will hear of friends receiving five and six per cent for their money for a while. Mark what I said, "for a while." These opportunities are not permanent. And it is doubtful whether they are opportunities. Russell Sage advised women to keep their money in a savings bank until friends in whom they had confidence made investment, then follow the friends. The first part of the late multimillionaire's advice is good, the last dubious. Most stories of misfortune begin with "I had a friend that"—— We may count on the loyalty and good intentions of our friends oftener than we can on their business acumen.

Savings banks are the safest of human institutions because they may not invest in wildcat schemes. This the State laws prevent. The laws of the State require investments to be made in the safest securities. The savings banks lend much of their money on mortgages on city property for sixty per cent of the property's value. There is a forty per cent margin for safety. Other securities are State and city bonds, secure as the State and city themselves. A third means of making the money of depositors make money is to lend under the most rigid conditions, as first mortgages, to a few of the best railroad companies.